

Local Guideline



John Hunter
Children's Hospital
CHILDREN, YOUNG PEOPLE AND FAMILIES



Health
Hunter New England
Local Health District

Hypospadias in the Newborn (NICU & SCN inpatients)

Sites where Local Guideline applies	Neonatal Intensive Care Unit JHCH.
Target audience:	All NICU clinical staff that provide care for neonatal patients.
Description	Guideline for evaluation and management of hypospadias in the neonate
This Local Guideline applies to:	
1. Adults	No
2. Children up to 16 years	No
3. Neonates – less than 29 days	Yes
Keywords	Chordee, dorsal hooding, hypospadias, penis, urethral opening, urinary tract infection, JHCH, NICU
Replaces Existing Local Guideline and Procedure	No
Registration Number(s) and/or name and of Superseded Documents	N/A
Related Legislation, Australian Standards, NSW Health Policy Directive, NSQHS Standard/EQuIP Criterion and/or other, HNE Health Documents, Professional Guidelines, Codes of Practice or Ethics:	
<ul style="list-style-type: none"> • Relevant Accreditation Criterion e.g. NSQHS Standards/EQuIP Criterion and/or other: • NSW Health Policy Directive 2014_036 Clinical Procedure Safety http://www0.health.nsw.gov.au/policies/pd/2014/pdf/PD2014_036.pdf • NSW Health Policy PD 2005_406 Consent to Medical Treatment http://www.health.nsw.gov.au/policies/PD/2005/pdf/PD2005_406.pdf • NSW Health Policy Directive PD 2007_036 Infection Control Policy http://www.health.nsw.gov.au/policies/pd/2007/pdf/PD2007_036.pdf • 'Factsheet- Hypospadias'. The Children's Hospital at Westmead, Sydney Children's Hospital, Randwick & Kaleidoscope, Hunter Children's Health Network. 2005-2009, accessed 21 May 2014, <http://www.sch.edu.au/health/factsheets/joint/?suhyposp.htm 	
Prerequisites (if required)	N/A
Local Guideline Note	This document reflects what is currently regarded as safe and appropriate practice. The guideline section does not replace the need for the application of clinical judgment in respect to each individual patient but the procedure/s require mandatory compliance . If staff believe that the procedure/s should not apply in a particular clinical situation they must seek advice from their unit manager/delegate and document the variance in the patients health record.
Position responsible for the Local Guideline and authorised by	Dr Paul Craven, Director of Newborn Services JHCH
Contact Person	Jennifer Ormsby, Guideline Development Coordinator NICU, JHCH
Contact Details	Phone: 02 4985 5304 Email: Jennifer.Ormsby@hnehealth.nsw.gov.au
Date authorised	05/10/2015
This Local Guideline contains advice on therapeutics	No
Date of Issue	05/10/2015
Review due date	05/10/2018

Note: Over time links in this document may cease working. Where this occurs please source the document in the PPG Directory at: <http://ppg.hne.health.nsw.gov.au/>

RISK STATEMENT

This local guideline has been developed to provide guidance to clinical staff in NICU to assist in evaluation and management of hypospadias in the newborn. It ensures that the risks of harm to the infants whilst caring for an infant with a hypospadias are identified and managed.

Any unplanned event resulting in, or with the potential for injury, damage or other loss to infants/staff/family as a result of this management must be reported through the Incident Information management System and managed in accordance with the Ministry of Health Policy Directive: Incident managaemtnPD2007_061. This would include unintended injury that results in disability, death or prolonged hospital stay.

RISK CATEGORY: *Clinical Care & Patient Safety*

OUTCOMES

1	Early recognition and diagnosis of hypospadias
2	Timely investigation and treatment of hypospadias, including possible associated anomalies

Hypospadias in the Newborn - One Page Summary and Checklist

(Ctrl+Click on [Coloured words to jump to that section](#))

[Definition and Diagnostic Features](#)

[Incidence](#)

[Risk factors](#)

[Evaluation](#)

History

Examination

Investigation

[Management](#)

[References](#)

[Appendix 1-Hypospadias Factsheet](#)

GUIDELINE

This Guideline does not replace the need for the application of clinical judgment in respect to each individual patient.

Definition and Diagnostic Features

[Top](#)

Definition

- A congenital abnormality in males resulting in abnormal positioning of the urethral meatus.
- The opening is displaced ventrally and may be found anywhere from the perineum or scrotum or along the length of the penis.

- Grading of severity is largely based on the distance of the urethral opening from the glans.
- Displacement is classified as glanular, subcoronal, distal shaft, proximal shaft, peno-scrotal, scrotal and perineal with anterior displacements being the most common¹. See Figure 1 below.

Diagnostic features²

1. Dorsal hooded prepuce (the foreskin may be lacking ventrally).
2. Chordee (abnormal curvature of the penis due to a lack of ventral tissue). The degree of chordee is variable.
3. Ventral displacement of the urethral opening.

Incidence

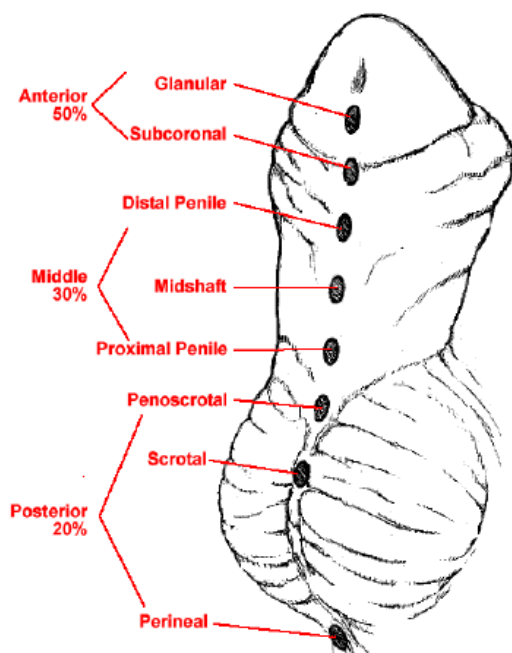
[Top](#)

- The incidence of hypospadias is 0.3-0.7% worldwide, making it one of the most common congenital abnormalities. Hypospadias appears to be occurring at an increasing incidence throughout the world, however this may be due to an increase in recording.^{3,4,5,6,7,8,9,10, 11}

Risk factors

[Top](#)

- Hypospadias results from a failure of the urethral folds to close effectively during embryological development.
- There are multiple associations with hypospadias, which means the cause is usually unknown and thought to be multifactorial. These include paternal hypospadias, prematurity, increased maternal age, maternal diabetes mellitus (pre-pregnancy) and exposure to oestrogenic compounds.^{12,13,14, 15}



This figure shows the range of positions along the ventral surface of the penis that the urethral meatus can be found

Evaluation

[Top](#)

Evaluation of hypospadias involves taking a history, examining and appropriately investigating as necessary.

History¹⁷

- Family history of hypospadias
- Maternal/ infant risk factors
- Note the appearance of the urinary stream –flow, direction, spray, number of streams

Examination¹⁸

- Observe for descended testes
- Measure the stretched penile length-normal stretched penile length for a term baby is approximately 2.5-3.5cm. ¹⁹ However it is impossible to measure the length with significant chordee or peno scrotal transposition.
- Presence of other congenital abnormalities, such as microcephaly, cleft palate, syndactyly, polydactyly or midline defects may suggest an underlying genetic cause or syndrome e.g. Opitz Syndrome or Wilms' tumour³⁰
- Assess severity by identifying the integrity and mobility of the urethral plate, integrity of the native urethra and the degree of clefting of the glans.

Investigation

- If distal hypospadias exists no imaging is required, however a proximal hypospadias will require possible renal imaging.^{20,21,22,}
- Presence of micro phallus with a hypospadias may in rare cases indicate an endocrine disorder and require a paediatric endocrine consultation.²³
- Undescended testes plus hypospadias: increased risk of a disorder of sex development (ambiguous genitalia) - therefore the patient requires a pelvic ultrasound and serum electrolytes. Congenital Adrenal Hyperplasia is one important diagnosis which must not be missed.^{24 , 25}
- Other organ abnormalities plus hypospadias: renal tract ultrasound required, as this patient is at increased risk of upper renal tract anomalies.²⁶

Management

[Top](#)

- Referral to a Paediatric Surgeon with interest in hypospadias (this occurs at JHCH) to be seen in the paediatric surgical clinics.
- If there is only a mild cosmetic abnormality and function is not affected, surgical correction may not always be necessary. This is dependent on discussions between clinicians and the family with the ultimate decisions resting with the parent/guardian²⁷.
- Surgery may be indicated for moderate/ severe hypospadias and is generally performed at approximately 6 months of age.
- It is vital that parents are advised not to have their child circumcised, as some methods of circumcision may not be safe in hypospadias. Also, the foreskin is often used to refashion the urethra and to prevent formation of a fistula.
- Ensure information given to parent/guardian regarding investigations and management of hypospadias for their infant. Provide fact sheet-see Appendix 1

Aims of repair²⁸:

1. Achieve fertility and sexual function
2. Achieve a cosmetically acceptable result
3. Achieve acceptable urinary function (single urinary stream with no spraying)

There are multiple surgical techniques to achieve these aims, all of which broadly aim to²⁹:

1. Reposition the meatus as close to the tip of the penis as possible (urethroplasty)
2. To re-form the glans into a more natural conical configuration (glansplasty)
3. Straighten the chordee
4. An option may be to correct the dorsal hooding of the foreskin (circumcision), however not routinely done.

REFERENCES[Top](#)**Endnotes**

¹ Shukla AR, Patel RP, Canning DA. Hypospadias. Urol Clin North Am 2004; 31:445.

² Baskin, LS 2014. 'Hypospadias'. Up to Date, accessed 6 June 2014, <<http://www.uptodate.com/contents/hypospadias>>.

³ Baskin LS, Ebbers MB. Hypospadias: anatomy, eitiology and technique. J Pediatric Surg 2006; 41:463.

⁴ Baskin LS, Himes K, Colborn T. Hypospadias and endocrine disruption: is there a connection? Environ Health Perspect 2001; 109:1175.

⁵ Paulozzi LJ, Erickson JD, Jackson RJ. Hypospadias trends in two US surveillance systems. Pediatrics 1997; 100:831.

⁶ Paulozzi LJ. International trends in rates of hypospadias and cryptorchidism. Environ Health Perspect 1999; 107:297.

⁷ Lund L, Engebjerg MC, Pedersen L, et al. Prevalence of hypospadias in Danish boys: a longitudinal study. 1977-2005. Eur Urol 2009; 55: 1022.

⁸ Abdullah NA, Pearce MS, Parker L, et al. Birth prevalence of cryptorchidism and hypospadias in northern England, 1993-2000. Arch Dis Child 2007; 92:576.

⁹ Nassar N, Bower C, Barker A. Increasing prevalence of hypospadias in Western Australia. 1980-2000. Arch Dis Child 2007; 92:580.

¹⁰ Huang WY, Chen YF, Guo YJ, et al. Epidemiology of hypospadias and treatment trends in Taiwan: a nationwide study. J Urol 2011; 185:1449.

¹¹ Nordenvall AS, Frisen L, Nordenstrom A, et al. Population based nationwide study of hypospadias in Sweden, 1973 to 2009: incidence and risk factors. J Urol 2014; 191:783.

¹² Porter MP, Faizan MK, Grady RW, Mueller BA. Hypospadias in Washington State: maternal risk factors and prevalence trends. Pediatrics 2005; 115:e495.

¹³ Brouwers MM, Feitz WF, Roelofs LA, et al. Risk factors for hypospadias. Eur J Pediatr 2007; 166:671.

¹⁴ Baskin LS. Can we prevent hypospadias? J Pediatr Urol 2007; 3:420

¹⁵ Carmichael SL, Yang W, Roberts EM, et al. Hypospadias and residential proximity to pesticide applications. Pediatrics 2013; 132:e1216.

¹⁶ 'Newborn Services Clinical Guideline- Hypospadias'. Auckland District Health Board. May 2005, accessed 21 May 2014,

<<http://www.adhb.govt.nz/newborn/Guidelines/Anomalies/Hypospadias.htm>>.

¹⁷ Baskin, LS 2014. 'Hypospadias'. Up to Date, accessed 6 June 2014, <<http://www.uptodate.com/contents/hypospadias>>.

¹⁸ Baskin, LS 2014. 'Hypospadias'. Up to Date, accessed 6 June 2014, <<http://www.uptodate.com/contents/hypospadias>>.

¹⁹ See Endnote 1.

- ²⁰ Cerasaro TS, Brock WA, Kaplan GW. Upper urinary tract anomalies associated with congenital hypospadias: is screening necessary? *J Urol* 1986; 135:537.
- ²¹ Davenport M, MacKinnon AE. The value of ultrasound screening of the upper urinary tract in hypospadias. *Br J Urol* 1988; 62:595.
- ²² Shelton TB, Noe HN. The role of excretory urography in patients with hypospadias. *J Urol* 1985; 134:97.
- ²³ See Endnote 1.
- ²⁴ Tasian GE, Zaid H, Cabana MD, Baskin LS. Proximal hypospadias and risk of acquired cryptorchidism. *J Urol* 2010; 184:715.
- ²⁵ Sekaran P, O'Toole S, Flett M, Cascio S. Increased occurrence of disorders of sex development, prematurity and intrauterine growth restriction in children with proximal hypospadias associated with undescended testes. *J Urol* 2013; 189: 1892.
- ²⁶ Baskin, LS 2014. 'Hypospadias'. Up to Date, accessed 6 June 2014, <<http://www.uptodate.com/contents/hypospadias>>.
- ²⁷ Dodds PR, Batter SJ, Shield DE, et al. Adaptation of adults to uncorrected hypospadias. *Urology* 2008; 71:682.
- ²⁸ Baskin, LS 2014. 'Hypospadias'. Up to Date, accessed 6 June 2014, <<http://www.uptodate.com/contents/hypospadias>>.
- ²⁹ 'Newborn Services Clinical Guideline- Hypospadias'. Auckland District Health Board. May 2005, accessed 21 May 2014, <<http://www.adhb.govt.nz/newborn/Guidelines/Anomalies/Hypospadias.htm>>.
- ³⁰ Snodgrass W, Baskin LS, Mitchell ME. Hypospadias. In: Gillenwater JY, Grayhack JT, Howards SS, Mitchel ME, eds. *Adult and Pediatric Urology*. 4th ed. Philadelphia, Pa: Lippincott Williams & Wilkins; 2002.

Further References

1. 'Hypospadias' Internal draft guideline previously produced by Kaleidoscope Hunter Children's Health Network.
2. 'Factsheet- Hypospadias'. The Children's Hospital at Westmead, Sydney Children's Hospital, Randwick & Kaleidoscope, Hunter Children's Health Network. 2005-2009, accessed 21 May 2014, <<http://www.sch.edu.au/health/factsheets/joint/?suhyposp.htm>>
3. 'Kids Health Info: Hypospadias 1- What is it'. The Royal Children's Hospital Melbourne. 2005, updated November 2010, accessed 21 May 2014, <http://www.rch.org.au/kidsinfo/fact_sheets/Hypospadias_1_What_is_it/>

AUTHORS: Mary Wagner NNP, Cecily Keogh Neonatal Registrar

UPDATED BY: Cecily Keogh Neonatal Registrar

REVIEWERS: Dr John Cassey Paediatric Surgeon
 Dr Rajendra Kumar Paediatric Surgeon
 Javeed Travadi Neonatologist NICU JHCH
 Nina Stankovski CNS NICU JHCH
 Dr Chris Wake Neonatologist NICU JHCH

APPROVED: NICU Executive management Committee 17/06/2015
 Clinical Quality & Patient care Committee 22/09/2015

FEEDBACK

Any feedback on this document should be sent to the Contact Officer listed on the front page.

APPENDIX 1

FACTSHEET



This fact sheet is for education purposes only. Please consult with your doctor or other health professionals to make sure this information is right for your child. If you would like to provide feedback on this fact sheet, please visit: www.schn.health.nsw.gov.au/parents-and-carers/fact-sheets/feedback-form.

Hypospadias

What is it?

Hypospadias is an abnormality of the penis which has three features:

The urethral opening is not in the correct place - it is usually further back from the tip of the penis usually on the underside.

There is often bending or curvature of the penis ("chordee"), which is more noticeable during erection.

The foreskin is usually (but not always) missing on the underside, giving a hooded or incomplete appearance. The foreskin can sometimes be intact.

The condition is usually identified at birth but sometimes it can be missed for several years.

How common is it?

Hypospadias is common. It occurs in approximately 1 in 300 boys. The incidence is increasing.

What causes hypospadias?

The cause is unknown. It is usually an isolated abnormality. It is not strictly an inherited trait, like eye or hair colour, but it tends to occur more frequently in families where there is a history of hypospadias. The risk of having another child with hypospadias is about 1 in 30 or 14% of male siblings (so you should not let it affect your family planning).

Are there any associated problems with hypospadias?

Most boys with hypospadias have no other problems. However if the hypospadias is severe, there may be a need for further investigations, such as an ultrasound or blood tests to rule out other problems. Your surgeon will tell you if further investigations are recommended.

Will my son need an operation?

Most boys with hypospadias will usually benefit from an operation. The operation aims to do three things:

Move the urethral opening to the end of the penis so that the child can stand and pass urine.

Straighten the penis, so that sexual intercourse can physically occur.

Normalise the appearance of the penis. The child will usually look circumcised after the repair.

If the boy's hypospadias is mild, he has a good stream of urine and a straight penis on erection, an operation may not be necessary.

If an operation is recommended, ideally this should occur before the boy is 2 years old, although this may not always be possible. Your child does not usually need to stay in hospital overnight after surgery.

the
children's
hospital at Westmead

The Sydney children's
Hospitals Network

SYDNEY
CHILDREN'S
HOSPITAL
RANDWICK

The Sydney children's
Hospitals Network

Kaleidoscope
CHILDREN, YOUNG PEOPLE AND FAMILIES

This document was last reviewed on 15 September 2014

© The Children's Hospital at Westmead, Sydney Children's Hospital, Randwick and Kaleidoscope Children, Young People and Families.

page 1 of 2

APPENDIX 1 cont

Sometimes more than one operation is required to complete the repair. The need for a second operation may not arise for many years.

Can my son be circumcised before the operation?

It is important that the child NOT be circumcised prior to having the corrective surgery, as his foreskin is likely to be needed for the surgical repair.

Remember:

- Hypospadias can be repaired.
- If you are worried, talk to your child's surgeon.
- It is important not to circumcise your child if hypospadias is noted at birth.